



A Case Report and Functional Outcome in Bilateral Osteochondritis Dissecans in the Knee which was Operated Arthroscopically

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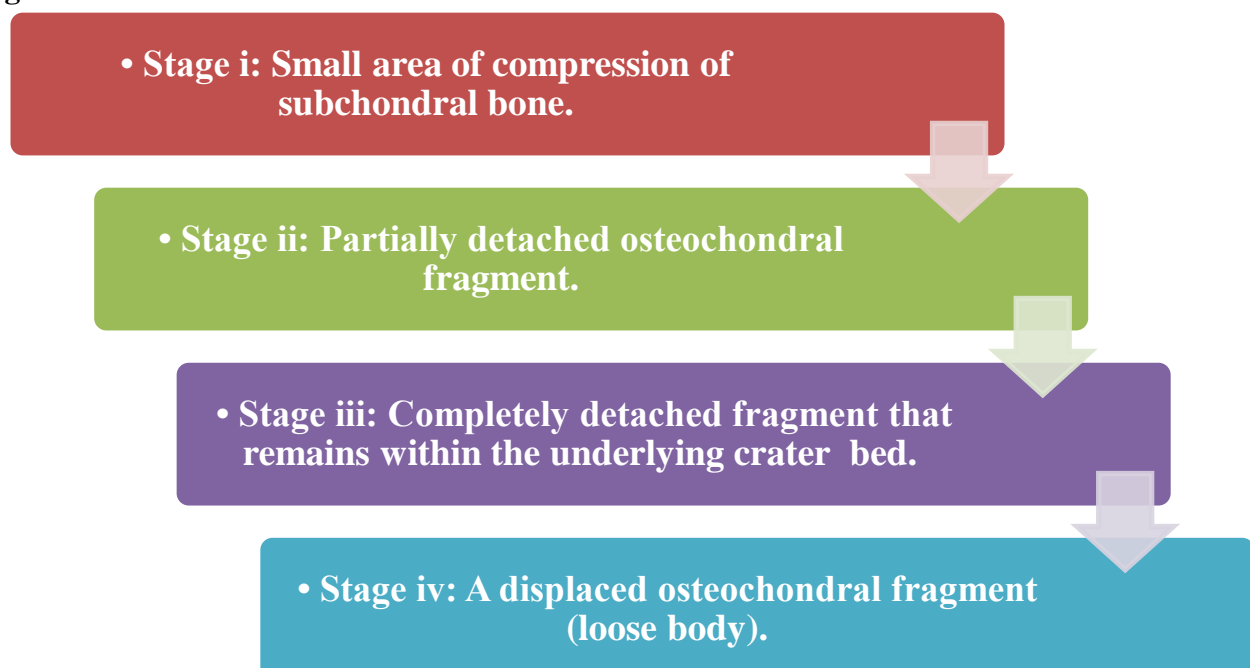
Definition

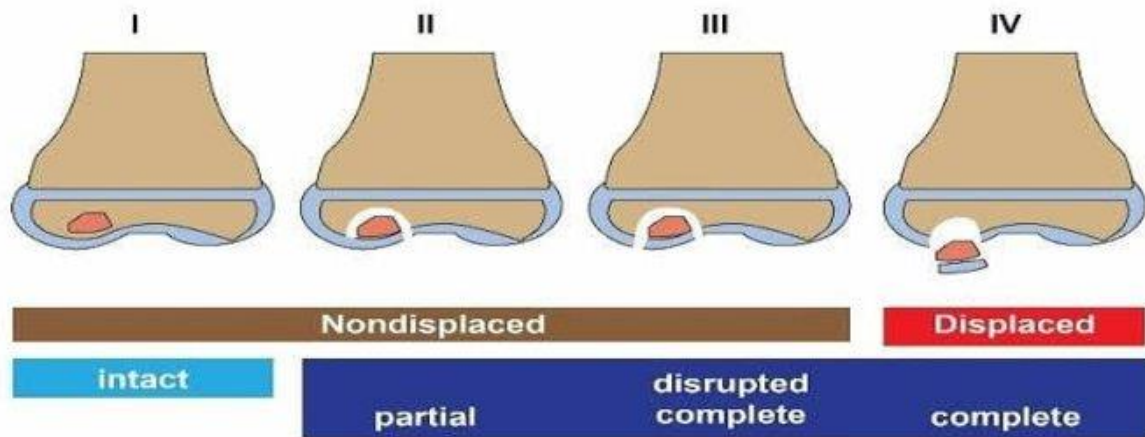
- Osteochondritis Dissecans (OCD) is a disorder of subchondral bone, which secondarily affects the overlying articular cartilage.
- In OCD, an area of subchondral bone becomes necrotic, resulting in a loss of structural support for the overlying

articular cartilage. This process leads to degeneration and fragmentation of the articular cartilage and underlying bone.

- In the absence of treatment or spontaneous regression, the osteochondral fragment gradually separates from its bony bed, eventually forming a loose body.

4 Stages of OCD:





Classification of osteochondritis dissecans I: Osteonecrosis. II: Dead bone has become separated from surrounding bone, as evidenced by a "halo." Cartilage (blue) is partially injured. III: Overlying cartilage is completely broken. Fragments remains in place but is loose and at risk for displacement. IV: Osteochondral fragment has separated of become "dissected" (König) to become a mobile body. There is no desiccation, or "drying."

Aetiology

- Osteochondritis dissecans can occur at any age and is around twice as common in males as in females.
- The precise aetiology is unknown.
- The most widely held theories implicate trauma, ischaemia, and genetic predisposition.
- These factors may act singly or in combination.

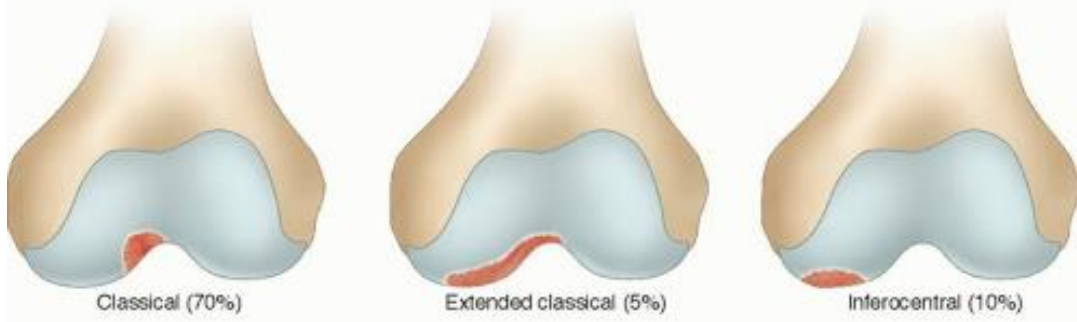
Case Presentation

- A 15 year old boy presented with pain in his bilateral knee since 5 years.
- Although, he did not complain that his knee pain caused a significant problem in his daily living activities, but his sports activities were restricted by knee pain since 2 years.
- He had no remarkable morbidities related to his knee in the past, and no family history relevant to musculoskeletal disorders.
- A physical examination of his affected knee revealed full range of motion without swelling, instability or apparent

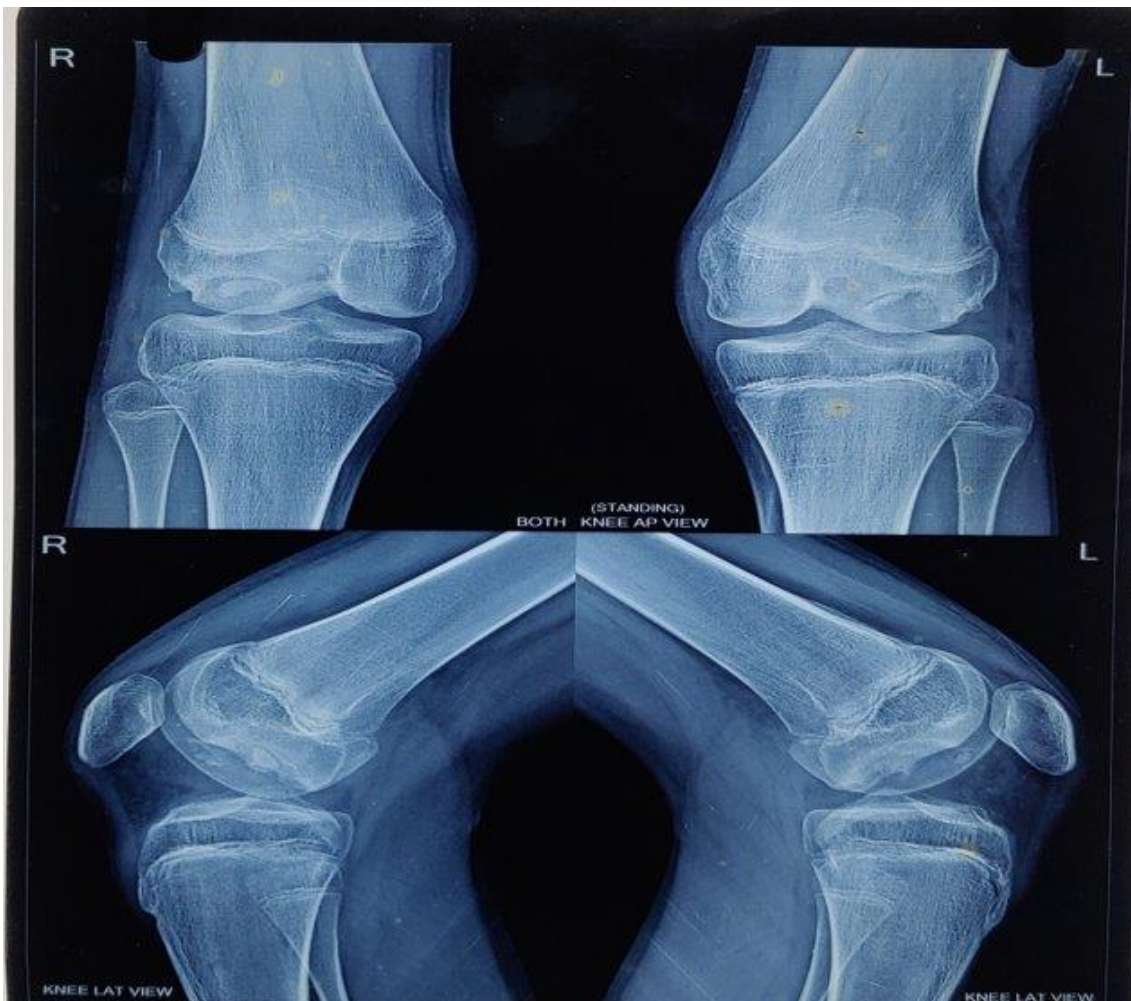
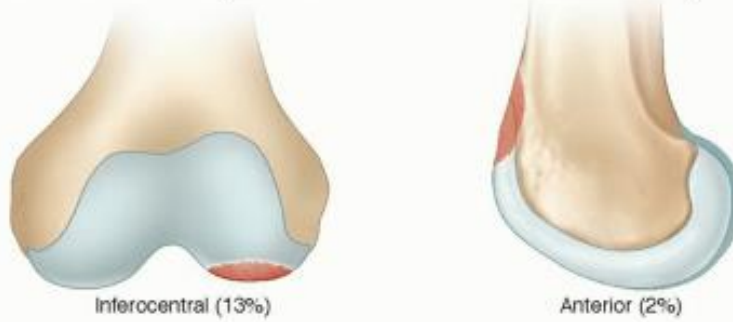
malalignment. In addition, no abnormal findings indicating neurological and general musculoskeletal disorders were demonstrated.

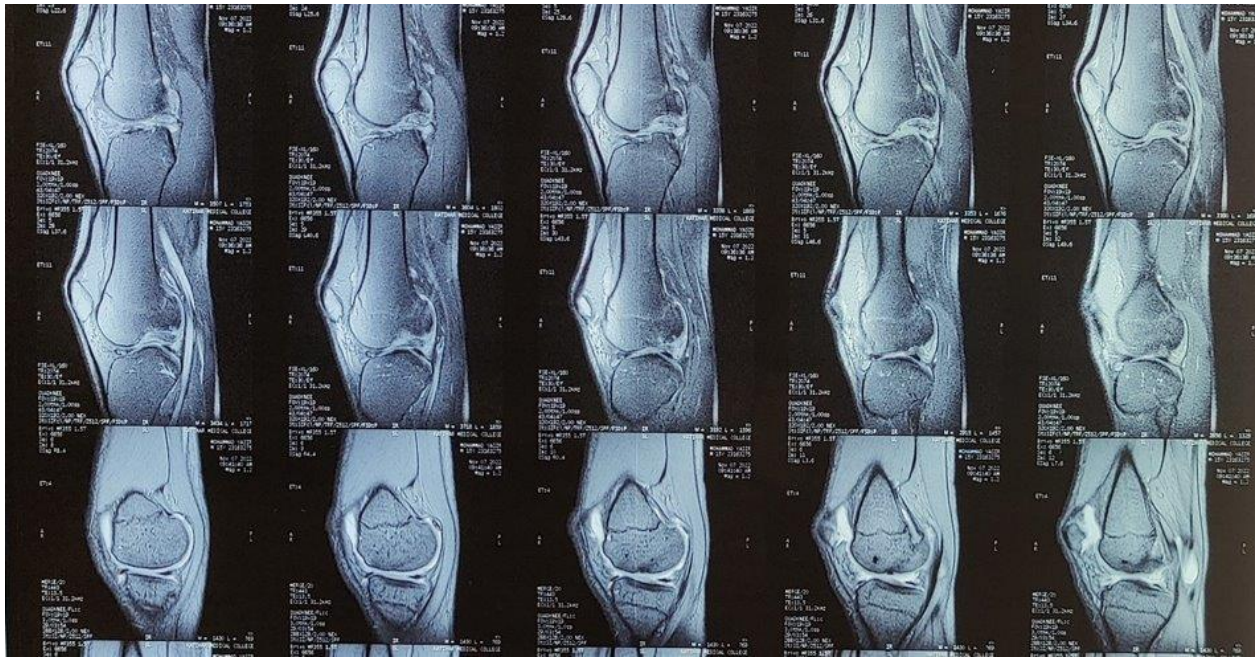
- A plain radiograph (posterior-anterior weight-bearing view) revealed a radiolucent lesion in the subchondral region coincident with the radiologic features of OCD in the lateral femoral condyle of both his knee.
- Magnetic resonance imaging (MRI) showed subchondral lesions suggestive of OCD in the lateral condyles of his bilateral knees with reactive changes in the surrounding bone marrow.

Medial Femoral Condyle Osteochondritis Dissecans Lesions (80%–85%)



Lateral Femoral Condyle Osteochondritis Dissecans Lesions (10%–15%)

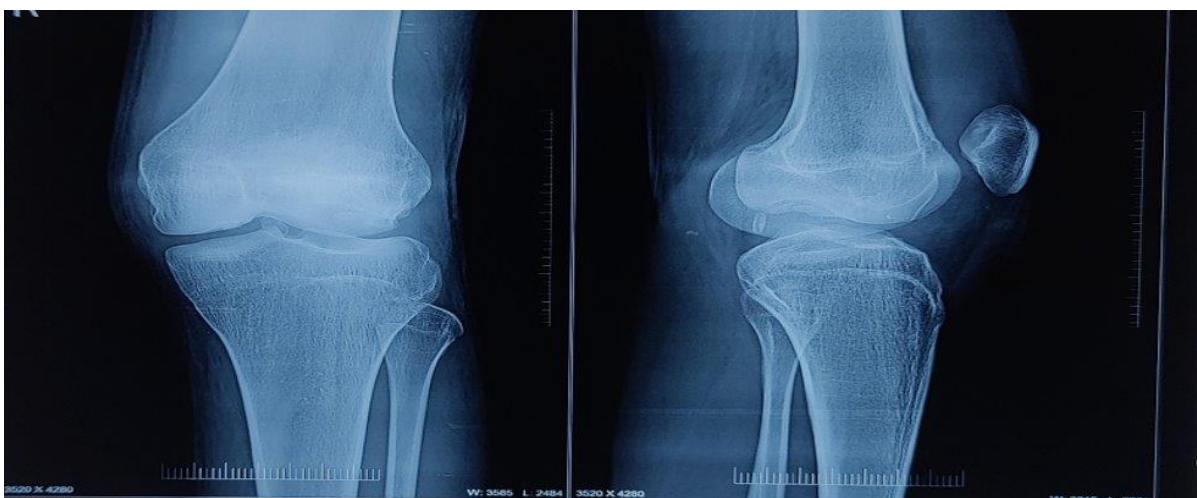




We first tried to do conservative treatment, but satisfactory healing was not attained. The radiograph after months the initial visit showed no apparent healing and appearance of loose bodies.



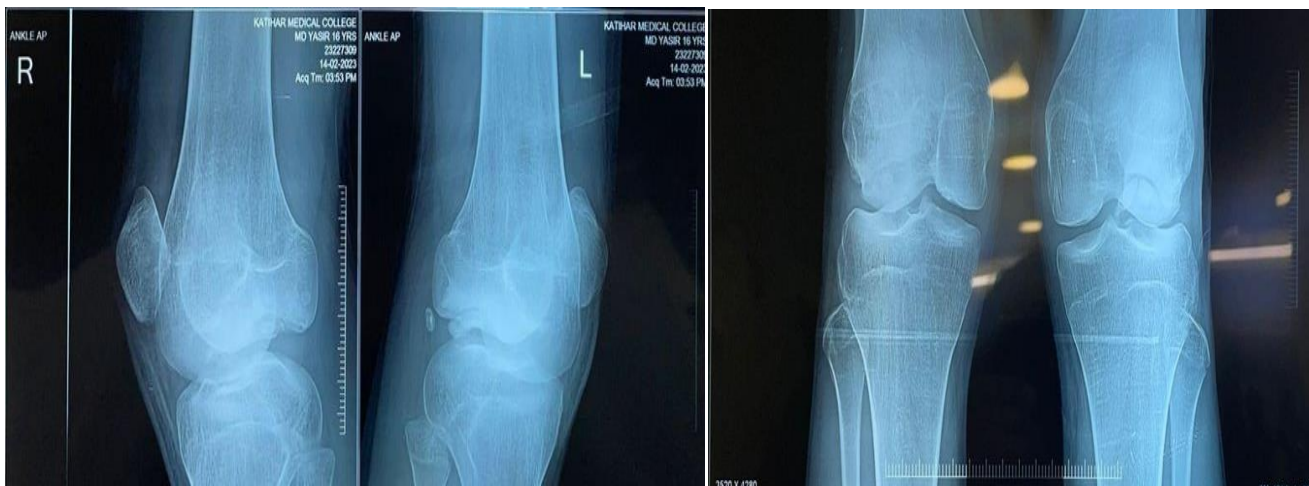
- So, we planned for surgical intervention. Firstly we planned for diagnostic Arthroscopy in right knee.
- During Arthroscopy we see inflamed synovial plica so we resect it.
- Several authors have noted an association between the presence of plicae and the development of chondral lesions of the femoral condyle.
- Removal of loose body was done. We also use the microfracture technique on the lesion for healing purpose.



X-Ray of Right Knee (AP, Lateral) after arthroscopic removal of loose body and microfracture of lesion.



X-Ray just after Surgery



**X-Ray after 3 months
Post-Surgery**

Discussion

- OCD is classified into juvenile and adult forms.
- Although the “classic” site of the OCD in medial femoral condyle accounting for more than 70 % of cases, lateral femoral condyle lesions are very uncommon.
- Regarding the treatment, it has been reported that the results of conservative treatment in juvenile OCD with open epiphysis are generally favourable. The reported rate of healing ranges from 50 to 81 %^[1].
- A variety of conservative measures, including cast immobilization, use of crutches and non-weight bearing activity modification have been reported^[2].
- Reported clinical factors associated with poor prognosis are lesion size (more than 20 mm in diameter)^[3,5].
- The surgical options for cases with failed conservative treatment include drilling as an initial option for stable lesions. The reported healing rate following drilling is generally high ranging from 67 to 90 %^[6-10].

- If no healing is achieved after drilling as in this case, some forms of bone grafting should be considered for revision. Use of an Autologous Chondrocyte Implantation has been reported for treatment of unstable OCD lesions.

Conclusion

- This is the case of a 15-year-old boy, who developed OCD of the lateral femoral condyles in bilateral knees.
- Following failed conservative treatment, he underwent arthroscopic drilling; the right knee lesion healed but, the lesion in the left didn't heal.
- So, next, we planned for Autologous Chondrocyte Implantation in the left knee.

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